INFORMATION ADDITIVE CODE GENERATOR AND DECODER FOR COMMUNICATION SYSTEMS

5   ABSTRACT OF THE DISCLOSURE

An encoder uses an input file of data and a key to produce an output symbol. An output symbol with key I is generated by determining a weight, $W(I)$, for the output symbol to be generated, selecting $W(I)$ of the input symbols associated with the output symbol according to a function of I, and generating the output symbol's value $B(I)$

10   from a predetermined value function $F(I)$ of the selected $W(I)$ input symbols. An encoder can be called repeatedly to generate multiple output symbols. The output symbols are generally independent of each other, and an unbounded number (subject to the resolution of I) can be generated, if needed. A decoder receives some or all of the output symbols generated. The number of output symbols needed to decode an input file is equal to, or

15   slightly greater than, the number of input symbols comprising the file, assuming that input symbols and output symbols represent the same number of bits of data.